September 12, 2006

MEMORANDUM

TO: Legislative Education Study Committee

FR: Sharon Caballero

RE: STAFF BRIEF: COLLEGE/WORKPLACE READINESS AND HIGH SCHOOL REDESIGN: ALIGNMENT OF STANDARDS: THE AMERICAN DIPLOMA PROJECT NETWORK

The 2006 Interim Workplan for the Legislative Education Study Committee (LESC) includes monthly presentations regarding the College/Workplace Readiness and High School Redesign. This presentation focuses on the American Diploma Project Network and other services provided by Achieve, Inc.

Issues:

- In 2003, legislation was endorsed by the LESC and was enacted to require that high school curricula and end-of-course tests be aligned with the placement tests administered by two- and four-year public postsecondary institutions in New Mexico.

- In August 2006, the LESC heard a presentation that summarized the alignment process and progress of implementation which offered options for the committee to consider that would hasten the implementation of the law. The LESC requested more information on several of the options including a presentation on the American Diploma Project Network.

- The American Diploma Project (ADP) is an initiative launched by Achieve, Inc., in partnership with the Education Trust and the Thomas B. Fordham Foundation. The initiative has been subsumed by the American Diploma Project Network which is dedicated to making sure every high school graduate is prepared for college or work.

- The ADP began as a result of a two-year research project that resulted in a 2004 report including benchmarks for English and mathematics that describe specific content and skills that graduates must master by the time they leave high school if they expect to succeed in postsecondary education or in high-performance, high-growth jobs.

- The ADP includes about 22 states that are responsible for educating more than 22 million students or 48 percent of all United States students. In each state, governors, state superintendents of education, business executives, and college and university leaders work collaboratively to evaluate school standards, assessments and curriculum and better align expectations with the demands of postsecondary education and work.

- In order to participate in the ADP network, states must make the following four commitments:

    - to align high school standards and assessments with the knowledge and skills required for success after high school;

    - to require all high school graduates to take challenging courses that actually prepare them for life after high school;

    - to streamline the assessment system so that the tests students take in high school also can serve as readiness tests for college and work; and

    - to hold high schools accountable for graduating students who are ready for college or careers, and to hold postsecondary institutions accountable for students' success once enrolled.

- Achieve was created by the nation's governors and business leaders and is a bipartisan, nonprofit organization that helps states raise academic standards, improve assessments and strengthen accountability to prepare students for postsecondary education, work and citizenship according to the Achieve, Inc. website.

- The brief presented at the August 2006 LESC meeting is attached.

Presenter:

- Dr. Christine Tell, Director, Postsecondary Outreach and Alignment, Achieve, Inc., will present information about the ADP as well as other issues related to alignment and how other states are participating.

Questions the committee may wish to consider:

1. What are the consequences of agreeing to the four commitments of the ADP?

2. What demands will a commitment to the ADP alignment process place on state resources, and over what time frame?

3. Can New Mexico proceed with the other aspects of its P-20 initiatives including high school redesign while the ADP is underway?

4. Can New Mexico achieve the goals of the ADP alignment process more expediently in a self-directed effort?

5. What other strategies or policies, beyond alignment of curriculum with placement tests, will be needed to ensure a seamless transition for students to postsecondary success?

State of New Mexico
LEGISLATIVE EDUCATION STUDY COMMITTEE

ATTACHMENT

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August 9, 2006

MEMORANDUM

TO: Legislative Education Study Committee

FR: Pamela Herman PH
Sharon Caballero SC

RE: STAFF BRIEF: COLLEGE/WORKPLACE READINESS AND HIGH SCHOOL REDESIGN: ALIGNMENT OF HIGH SCHOOL END-OF-COURSE TESTS WITH HIGHER EDUCATION PLACEMENT TESTS

The 2006 Interim Workplan for the Legislative Education Study Committee (LESC) includes monthly presentations regarding the college/workplace readiness of New Mexico high school students. This presentation focuses on the alignment of high school curricula and end-of-course tests with higher education placement tests.

Issues:

In 2003, the LESC endorsed and the Legislature passed HB 212, *Public School Reforms*, to restructure and reform the New Mexico system of public education. One key provision in HB 212 as well as separate legislation in the House and Senate was a new section in the *Public School Code* requiring that high school curricula and end-of-course tests be aligned with the placement tests administered by two- and four-year public postsecondary institutions in New Mexico. The legislation was proposed by the LESC based on testimony from the National Conference of State Legislatures (NCSL) and others during the 2001 interim urging the alignment of high school curricula with college placement requirements. The LESC has included progress reports on implementation of this law in every interim workplan since 2003 when the law was enacted.

What is alignment?

- Alignment of high school curricula with college placement tests is one step in the standards-based reform movement to develop a streamlined P-20 educational system.

- As a policy initiative, alignment provides a bridging framework between educational levels by ensuring that students exiting high school are prepared with the appropriate knowledge and skills to enter the workplace or higher education.

- Alignment includes the process of matching high school content standards with college admission and placement requirements and employer expectations so that students will be ready to take college-level coursework or meet workplace requirements.

- In mandating test alignment, the New Mexico Legislature echoed efforts across the nation to smooth the transition between high school and postsecondary education. One highly visible initiative is the American Diploma Project Network sponsored by Achieve, Inc., a national nonprofit organization committed to aligning high school standards, assessments, graduation requirements and accountability systems with the demands of college and the workplace.[1]

- Several states have acted, often through legislation, to embed a college readiness indicator as part of a high school level examination system, according to the Education Commission of the States (ECS). Such an indicator can serve as an outcome for students, schools, districts and states to measure the success of the high school-college alignment process. Most states focus on English and math alignments.

Why is alignment important?

According to testimony presented by the Center for Education Policy Research to the LESC regarding the Standards for Success project, alignment can:

- reduce or eliminate the number of students who need remediation in college;
- help students prepare better for success in college-level coursework or the workplace; and
- increase the value of test results from high school.

The committee has frequently heard testimony regarding the low level of academic achievement of high school students in New Mexico, reflecting the need for a stronger focus on college readiness:

- *Measuring Up 2004*, the state report card on higher education prepared by the National Center for Public Policy and Higher Education, gave New Mexico an "F" for preparation of students for higher education. The report notes in particular the very small percentages of New Mexico

[1] The American Diploma Project (ADP) is an initiative launched by Achieve, Inc., in partnership with the Education Trust and the Thomas B. Fordham Foundation. The initiative has been subsumed by the American Diploma Project Network, which is dedicated to making sure every high school graduate is prepared for college or work. The ADP began as a result of a two-year research project that resulted in a 2004 report including benchmarks for English and mathematics that describe specific content and skills that graduates must master by the time they leave high school if they expect to succeed in postsecondary education or in high-performance, high-growth jobs. Subsequent ADP reports have assessed the rigor of state high school exit exams and high school course-taking requirements.

middle school students enrolled in algebra, and high school students enrolled in the upper-level math and science courses, that research confirms are necessary for college success.

- High school dropouts, of course, face enormous barriers to enrolling and succeeding in postsecondary education, and New Mexico has an elevated high school drop out rate.

  - According to *Diplomas Count: An Essential Guide to Graduation Policy and Rates* released in June 2006, New Mexico public high school graduation rates for school year 2002-2003 were 56.7 percent, compared to the national average of 69.6 percent. This is based on a "cumulative promotion index" to estimate the probability that a student in grade 9 will complete high school on time with a regular diploma. Only two states ranked lower than New Mexico: Georgia (56.3 percent) and Nevada (55.9 percent).

  - The Public Education Department (PED) reports a one-year retention rate of 72.5 percent for 9th graders in school year 2004-2005 who enrolled in grade 10 in fall 2005, tracked using the unique student identification number system required by the Legislature in 2004. (PED states that by 2008 it will be able to calculate graduation rates for all New Mexico high schools using cohort data that shows the percent of students entering grade 9 who graduate with a standard diploma within four years.)

- The annual report of schools making adequate yearly progress (AYP) from PED in August 2006 indicated that of the 416 schools around the state that did not make AYP, 397 missed the mark because of low student performance on state reading and math assessments.

- Even if high school students succeed in earning a diploma, about half of recent New Mexico high school graduates require remediation in college, according to preliminary results of a study by the Office of Education Accountability presented to the LESC in May 2006. Of approximately 35,650 students who entered a state public postsecondary institution directly after graduating from a New Mexico high school over a five year span from 2000 to 2004:

  - approximately 49 percent required one or more remedial classes in mathematics or literacy skills, with results by discipline as follows:
    - ✓ approximately 41 percent took remedial classes in mathematics ("numeracy or computational skills"); and
    - ✓ approximately 31 percent took remedial classes in literacy or communication skills;

  - the percentage of public high school graduates who took college remedial courses varied depending on the ethnicity of the student, as follows:
    - ✓ approximately 66 percent of all Native Americans;
    - ✓ approximately 58 percent of all Hispanics;
    - ✓ approximately 55 percent of all Black, non-Hispanic students;
    - ✓ approximately 38 percent of all Asian or Pacific Islanders; and
    - ✓ approximately 36 percent of all White, non-Hispanic students; and

  - New Mexico's public high schools varied in the percentage of their graduates who took remedial courses ranging from a low of approximately 16 percent to a high of approximately 83 percent.

- *Measuring Up 2004* shows that New Mexico is one of the lowest performing states in the percentage of young people earning a high school credential, losing many students at every juncture in the "educational pipeline":

  - for every 100 students who enter grade 9, about 60 are likely to earn a high school diploma;
  - of those 60 students who are graduated from high school, about 33 are likely to enroll in college within one year;
  - of those 33 enrolling in college, 24 persist through the first year; and
  - of those 24, only 11 graduate with an associate degree in three years or bachelor's degree in six years.

How can New Mexico achieve high school-college alignment and what progress has been made toward meeting the requirements of the current law?

> *High school curricula and end-of-course tests shall be aligned with the placement tests administered by two- and four-year public educational institutions in New Mexico. The department of education shall collaborate with the commission on higher education in aligning high school curricula and end-of-course tests with the placement tests.* [Section 22-2-8.11 NMSA 1978]

Authorities on the subject of high school-college alignment such as Achieve, Inc. and the Center for Educational Policy Research recommend that the alignment process begin by aligning content and performance standards and proceed from there to course and test alignment. To align standards, the state should engage in a three-step process:

1. Conduct an external review of state high school content standards using as a yardstick a national model such as those promulgated by the College Board, American Diploma Project, or ACT, Inc.

   New Mexico has accomplished the following:

   a. PED provided the LESC with documentation during the 2004 interim from the College Board illustrating substantial alignment between the New Mexico standards for math and English and the "Standards for Success" developed by the Center for Education Policy Research and recommended by the College Board (see Attachment 1).

   b. However, in December 2005 that analysis was described before the committee as "very general" by the Center, implying that a more detailed analysis would be helpful.

2. Convene cross-sector (K-12 and postsecondary) teams by discipline, first to clarify the performance standards expected of exiting 12th graders, and then to expand grade 12 standards to align fully with postsecondary success standards.

   New Mexico has accomplished the following:

   a. In the 2004 interim, a representative of the New Mexico Association of Community Colleges (NMACC) testified that higher education faculty members in math and English

had reviewed the competencies in the national Standards for Success promulgated by the Association of American Universities and determined which should be taught in high school and which in college. A copy of this list of competencies submitted by NMACC to the LESC staff in 2005 may require updating. (see Attachment 2).

b. In the 2005 interim, representatives of the Higher Education Department (HED) Articulation Task Force described the process by which curricula of lower division common core courses at state public postsecondary institutions were being aligned in the process of creating the common course name and numbering system required by statute. The task force has identified outcome measures (competencies) for each of the five areas of the New Mexico Common Core Curriculum and made them available on HED's website. According to HED these competencies would require further definition before they can be aligned with high school performance standards.

3. Discuss and reach consensus on a set of 12th grade performance standards that ensure that all students are ready for college level coursework and the workplace. This policy decision may mean increasing standards for high school graduation to the level of college readiness, or it may mean explicitly differentiating two high school graduation standards: One for college readiness and one for those who do not meet the rigorous high school coursework necessary for college-level coursework.

   New Mexico has not yet accomplished this task.

Once high school exit and college entry level *standards* are aligned through this three-step process, alignment of *coursework* and *assessments* can proceed.

Course Alignment

- According to the Center for Educational Policy Research, course alignment would require analysis (a curriculum audit) of a representative sample of exit-level high school courses and corresponding entry-level courses at each postsecondary institution in the state compared to the revised 12th grade performance standards.

  - The HED Articulation Task Force has developed a matrix of course alignments for two year and four year core courses in math and English that indicates the courses at all public institutions that cover the same competencies. At the high school level, PED would need to implement a formal process for analyzing exit-level high school courses.

Assessment Alignment

- The state assessments developed for grades 3-9 and 11 in response to New Mexico's *Assessment and Accountability Act* and the federal *No Child Left Behind Act of 2001* are standards based.

  - A newly released report (July 20, 2006) from the American Federation of Teachers (AFT), *Smart-Testing: Let's Get It Right*, lists New Mexico as one of just 11 states that have strong K-12 content standards with transparent documentation that assessments align with the standards.

- PED states that the current examination administered by the department to satisfy the statutory graduation requirement, the *New Mexico High School Competency Examination*, is a basic skills test that is not aligned with state high school standards.

- At the June 2006 LESC meeting, a PED representative presented possible changes to the *New Mexico High School Competency Exam* that would help to address the mandate to align high school exit tests with postsecondary placement tests, possibly eliminating one high stakes test for New Mexico students, as follows:

  - New Mexico could use the 11th Grade Standards Based Assessment (SBA) both as a graduation test and an indicator of college readiness. The first step is two tier: establish the relationships between the 9th Grade and the 11th Grade Standards Based Assessment; the Preliminary Scholastic Aptitude Test (PSAT)[2], the pre-ACT PLAN, and the 9th Grade Standards Based Assessment; and the SAT, the ACT and the 11th Grade Standards Based Assessment. This process establishes predictors for grade 11 success based on 9th grade tests, and would allow schools to provide appropriate remedial instruction in grades 10, 11, and 12.

    The second step would be to establish cut scores for graduation and for college readiness. PED recommended the Bookmark Standards Setting Procedure as the process to use to develop cut scores. The Bookmark process uses level or content experts who agree on tiered standards, examine tests that students will take, and in a series of ratings establish the cut scores.

  - Another alternative suggested by PED included moving the 11th grade standards based assessment to grade 10, and requiring the administration of the ACT test in grade 11 at state expense. PED cautioned there would be AYP issues that would have to be addressed. (Some states are requiring the ACT in grade 11, and a few have requested and expect to receive federal approval to use the test for determining AYP).
    - ✓ The New Mexico *Assessment and Accountability Act* requires the administration of standards based assessments in high school grades 9 and 11. NCLB, on the other hand, only requires that a standards based exam be administered once in grades 10 to 12.

How other states are providing for "college readiness" indicators at the high school level

States are taking various approaches to measure the alignment of their high school exit standards, coursework and assessments with college entrance standards as follows (see table, Attachment 3):

- **Offering voluntary assessments aligned with college-readiness standards:**

  - **California offers students a chance to take a voluntary assessment aligned with college-readiness standards.** In 2004, the state of California began offering high school juniors the option to take the California Early Assessment. This is a voluntary

[2] The PSAT is a standardized test offered by the College Board as practice for the SAT; it measures critical reading, math problem solving, and writing skills. The College Board states that PSAT results provide feedback on skills necessary for college study and give an early idea of how students will perform on college admission tests, as well as alerting school staff to students who might benefit from taking Advanced Placement classes.

supplement to the mandatory 11th grade assessment in language arts and mathematics, with items developed by the California State University system. Students who score well enough on these items may be exempt from required entry-level college courses; low scoring students can elect appropriate coursework during grade 12. The California Early Assessment Program includes a teacher professional development component.

- **Administering state assessments with embedded college-readiness indicators:**

  - **Texas has set a college-readiness "cut score" for the state assessment required for high school graduation.** Beginning in 1987, the Texas Academic Skills Program (TASP) required public two- and four-year postsecondary institutions to administer a common placement instrument. In 2003, the Legislature created the Texas Success Initiative, which requires that the mandatory 11th grade state standards-based assessment (Texas Assessment of Knowledge and Skills, or TAKS) include a college-readiness component.
    - ✓ Texas used a research process similar to that described by PED at the June 2006 LESC meeting to validate a college-readiness cut-score for the 11th grade standards based assessment.

- **Requiring all high school students to take a college placement test:**

  - **Illinois:** Since spring 2001, Illinois has required all students in grade 11 to take the ACT, two Workkeys[3] components (Reading for Information and Applied Mathematics) and a state-developed science assessment. The results are included on students' transcripts and used for determining school and district AYP, but do not carry "high stakes" for graduation.

  - **Colorado:** Since spring 2001, Colorado has also required all students in grade 11 to take the ACT. The results are used to rate schools for state accountability purposes but not for AYP; results are included on students' transcripts but scores do not determine whether or not a student graduates from high school.

  - **Michigan:** In spring 2007, Michigan will replace the Michigan Educational Assessment Program with the Michigan Merit Exam for grade 11 that includes the ACT and Workkeys tests. Michigan intends the results to be used to determine AYP.

  - **Kentucky:** In spring 2007, Kentucky will require students in grade 11 to take the ACT and in grades 8 and 10 to take the pre-ACT tests known as EXPLORE and PLAN. No later than school year 2007-2008, Kentucky will also offer students in grades 10, 11, and 12 the opportunity to take the Workkeys test at state expense.

  - **Maine:** In 2006, the state of Maine began requiring all 11th grade students to take the SAT, and in 2007 will also require students in grade 10 to take the PSAT. Maine intends to use the SAT as its state high school level standards based exam; however, it has not yet received permission to do so from the United States Department of Education.

[3] Workkeys assessments, according to ACT, Inc. which markets them, are designed to give students and workers reliable relevant information about workplace skill levels including reading, mathematics, writing, locating information, teamwork, observation, listening, applied technology, and readiness.

- According to ACT, in Illinois and Colorado the strategy of requiring the ACT test has contributed to significantly increased in-state college enrollment, particularly among low-income and minority students. ACT also reports that after the test became mandatory more students in Colorado achieved scores at least at the low end of college readiness.

- **Providing middle and high school students with voluntary opportunities to participate in pre-ACT assessments (the Educational Planning and Assessment System [EPAS]) or the PSAT:**

  - **Arkansas and Oklahoma:** Since 1993, these two states have paid the full cost for any students who wish to participate in the EPAS, consisting of the EXPLORE (grade 8 or 9), PLAN (grade 10), and the ACT (grade 11). This system provides students with scholarship, college, and other resource information.

  - **Louisiana:** In 2001, the Louisiana higher education system began providing the opportunity for all middle and high school students to take the EXPLORE and PLAN tests at state expense. In Louisiana, approximately 85 to 90 percent of Louisiana 11th grade students also take the ACT, at their own expense. The Louisiana education department indicates that both the National Assessment of Educational Progress and the ACT scores in Louisiana have risen faster than the national average since the EPAS initiative was implemented.

  - **South Carolina and Florida** provide every public high school with funds to give any 10th grade student the opportunity to take the PSAT or the PLAN.

  - **In New Mexico**, many 10th grade students will have the opportunity to take the PSAT at state expense in school year 2006-2007. Using some of the funds appropriated for Advanced Placement (AP), PED recently issued a Request for Proposals that includes a PSAT pilot project to identify students who should be counseled to take AP classes. The study will include all 10th grade students in 14 school districts (Albuquerque, Bernalillo, Deming, Farmington, Gadsden, Gallup-McKinley, Los Lunas, Portales, Rio Rancho, Roswell, Santa Fe, Socorro, Taos, and Zuni), approximately 15,990 students. The College Board states that PSAT is a predictor of the score a student will receive on the SAT which is taken in grade 11 and could be used as a college-readiness indicator.

- **Providing high school students with opportunities to take other college placement assessments:**

  - Several New Mexico postsecondary institutions, such as the Doña Ana branch of New Mexico State University, Central New Mexico Community College, Eastern New Mexico University-Roswell and Northern New Mexico College state that they travel to high schools in their regions to provide students with opportunities to take the Accuplacer, Compass or another college placement test, and meet with students and their families to counsel them regarding what high school or dual enrollment coursework a student needs to become college-ready.

Options the committee may wish to consider, alone or in combination, to speed up the alignment process:

According to the ECS, the vast majority of jobs of the 21st century will require some postgraduate education or training. In order to help ensure that students are prepared for these jobs, ECS catalogs initiatives taken in a number of states to embed college readiness indicators in high school curriculum or assessments. These are the outcome indicators that show if educational systems are aligned for individual students, schools, districts, and whole states. Based on the experience of other states engaged in P-20 alignment, some of which are described above, there are several policy options that New Mexico could choose to pursue alone or in combination so that students know if they are college-ready, and educators, legislators, and the public know if schools are producing college-ready graduates and meeting the requirements of 2003 law on alignment. The LESC could:

1. Recommend a requirement that all 8th and/or 10th grade students take pre-college placement tests such as EXPLORE and/or PLAN to provide data for students and high schools on college-readiness so that necessary remediation can be provided, and make an appropriation for the estimated per-pupil cost of tests. Louisiana and other states are doing this (see p. 8).

2. Require that public two- and four-year postsecondary institutions expand administration of Accuplacer, Compass, or other college placement tests to all 11th grade students in New Mexico as being done by Central New Mexico Community College, Eastern New Mexico University, and others and make an appropriation for the estimated per-pupil cost of tests. However, alignment of these placement tests with high school standards would need to be established.

3. Require that all New Mexico 11th grade students take the ACT or another college admissions test, and make an appropriation for the estimated per-pupil cost of tests. Colorado and other states are doing this (see p. 7).

4. Recommend an appropriation to expand the PED PSAT pilot study to include all New Mexico 10th graders so a college readiness indicator is embedded at the high school level to predict student achievement on the SAT and provide direction for students and high schools about necessary remediation (see p. 8). However, New Mexico is an ACT state.

5. Endorse the PED proposal to use the 11th grade New Mexico Standards Based Assessment both as a graduation test and an indicator of college readiness (see page 6).

6. Join the American Diploma Project Network, which would enable New Mexico to participate in Achieve's alignment initiative. This formal alignment process provides an initial side by side comparison (SBS) of the state's high school standards with the American Diploma Project (ADP) benchmarks in English and mathematics. The comparison is used to identify gaps between expectations for high school and for college and work. Achieve is currently assessing interest in a third cohort among states for school year 2006-2007. Achieve's priority is to respond to the needs of the 22 states that are members of the ADP network. Non-member states may participate as space permits. This alignment process would take 10 to 15 months.

Conclusion:

- The article "Teachers and the Uncertain American Future," a July 2006 report by the College Board's Center for Innovative Thought, brings the whole discussion of educational reform, standards-based assessments and school alignments back to the key players in any reform movement: teachers. "It is now apparent that most of our efforts at school reform will come to nothing unless teachers are up to the task. Standards-based reform may be the lever that sets in motion the improvements the United States has sought in its schools for decades." The report goes on to say that successful school innovations rest on the time, talent, and skills of teachers as they are the center of education. This may be no truer for any state than New Mexico.

Background:

Research indicates that many students are ill-prepared to enter the workplace or higher education upon graduation from high school. This research has centered primarily on the number of students in remedial courses in public higher education, graduation rates of students needing remedial courses, students entering the workforce, and opinions of leaders of business and industry. The costs of repeating coursework and delayed graduation, and the fear of loss of America's global economic competitive advantage, are pushing states to evaluate their high school curricula and graduation requirements. At the national level, numerous authorities have advocated for a better aligned public high school to college pipeline, including the following:

- *The Toolbox Revisited*, a follow-up to *Answers in the Toolbox* in 1999, describes a longitudinal analysis of higher education attainment by the students who graduated from United States high schools in 1992 and attended a four-year college any time through December 2000. The study finds that "academic momentum" and the academic intensity of a student's high school curriculum are the most influential factors in whether or not a student attains a bachelor's degree.

- The ACT Policy Report "Courses Count: Preparing Students for Postsecondary Success" warns that "rigorous college preparatory course sequences – particularly in English, mathematics, and science – are critical to preparing students for postsecondary education and work. Yet large numbers of students still do not participate in the most beneficial courses, and there is little evidence that the high school curriculum is rigorous enough to ensure that most students are adequately prepared for postsecondary success."

- *Ready for College and Ready for Work: Same or Different?*, a report by ACT, Inc., provides evidence that whether planning to enter college or workforce training programs after graduation, high school students need to be educated to a comparable level of readiness in reading and mathematics. Graduates need this level of readiness if they are to succeed in college-level courses without remediation and to enter workforce training programs ready to learn job-specific skills.

Since at least 1998, as part of its statutory mandate regarding teacher preparation programs, the LESC has studied education reform issues related to integrated P-20 system planning for public education. The P-20 initiative began with the creation of the Teacher Education Accountability Council (TEAC) and continued to include changes in graduation requirements, dual enrollment

policy, the requirement for test alignment, and most recently a presentation regarding the high level of remediation in college required for New Mexico high school graduates. The LESC has heard testimony or taken action as follows regarding high school-postsecondary alignment:

- In the 1999 special session, the LESC endorsed and the Legislature passed HJM 5, *High Quality Teachers*, requesting the LESC, in cooperation with the State Department of Education (SDE, now PED), the Commission on Higher Education (CHE, now HED) and New Mexico teacher preparation programs to create a systematic plan for the recruitment, preparation, induction, professional development, and support of high-quality teachers. One result of the work requested by HJM 5 was the creation of TEAC.

- In 2000, the LESC heard testimony from deans of public postsecondary schools of education and experts from Colorado and Connecticut regarding the value of partnerships between public K-12 systems and higher education, noting they are effective in combining resources, in grounding schools in research, and in grounding universities in practice.

- In the 2001 interim, the LESC examined teacher quality and P-16/K-16 initiatives as a focus area of its workplan. The LESC met with the leadership of the six public and two private four-year institutions of higher education to develop a plan to consider the potential alignment of teacher preparation curricula with the K-12 standards and benchmarks to increase student achievement.

- In 2002, the LESC Ad Hoc Subcommittee for Education Reform included the role and structure of a P-20 statewide system of education within its focus. In the 2003 session, the LESC endorsed and the Legislature passed SJM 6, *Integrated Education System Plan*, requesting the conversion of TEAC into a P-20 education advisory council for New Mexico, to provide agreed-upon core learning goals to raise the bar of academic achievement for all students at all levels and improve the New Mexico educational system through an aligned policy between public schools and higher education.

- In 2003 as noted, the LESC endorsed and the Legislature passed comprehensive statewide reforms including the requirement to align high school curriculum and school end-of-course tests with higher education placement requirements, so that students know whether or not they are prepared for college-level work while they still have time in high school to remedy any lack of preparation.

- Because of its interest in seeing this alignment proceed, for the 2004 interim the LESC requested that PED and CHE provide it with multiple progress reports concerning efforts to address the statutory mandate. At the end of the interim, the LESC received the following information:

  - A November 2004 report summarized the activities of PED and CHE in collaboration with NMACC to address alignment by focusing on aligning standards. The report proposed a statutory amendment that would have deleted the current law and replaced it with a provision that would have aligned high school end-of-course tests with New Mexico content standards and postsecondary entrance competencies.

- In December 2004, the LESC heard testimony from Dr. David T. Conley, Director of the Center for Educational Policy Research at the University of Oregon, regarding the *Standards for Success* project and the process of aligning high school curricula and postsecondary placement tests.
  - ✓ A report from the project, entitled *Mixed Messages*, highlights the finding that most state exams may not align well enough with college success standards to give high school students and teachers meaningful feedback about college readiness. The report recommends that leaders of state secondary and postsecondary systems devise strategies to increase the alignment between state K-12 standards and assessment systems and postsecondary admissions and placement policies.

- In the 2005 interim, the LESC requested that the Secretary of Higher Education take responsibility for the alignment process. Subsequently the Secretaries of Higher Education and Public Education created a joint task force on alignment to recommend a plan for achieving the mandate of alignment. The task force reported its recommendations to the LESC in June 2006.

Questions the committee may wish to consider:

1. How will the process of high school-college alignment intersect with the committee's consideration of alternative pathways to high school graduation or other initiatives, if at all? Must one policy agenda be resolved prior to the other?

2. What is the relationship, if any, between requiring a rigorous high school curriculum aligned with entry level college expectations and the high school dropout rate?

3. How will more rigorous expectations for high school students affect the demand for highly qualified teachers and more intensive teacher professional development?

4. How should educators at the K-12 and postsecondary level be empowered to participate meaningfully in crafting an appropriate framework for high school-college test alignment?

5. What other strategies or policies, beyond alignment of curriculum with placement tests, will be needed to ensure a seamless transition for students to postsecondary success?

6. What measures are in place to determine if high school administrators and teachers understand and use the current standards throughout the state?

7. Does the Standards Based Assessment at grade 11 measure the level of English and mathematics skills necessary for high school exit and entry into college?

8. What further information or expert testimony does the committee need in order to more fully consider the available options?

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

DRAFT
College Board Standards for College Success™
Correlation to New Mexico State Standards

MATHEMATICS

NM State Standards **Grade 6**		College Board Standards for College Success in Mathematics and Statistics				
		Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
1. NUMBER AND OPERATIONS						
A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	C	√				√
B. Understand the meaning of operations and how they relate to one another.	C	√				
C. Compute fluently and make reasonable estimates.	C*	√			√	√
2. ALGEBRA						
A. Understand patterns, relations, and functions.	C	√	√		√	√
B. Represent and analyze mathematical situations and structures using algebraic symbols.	C	√	√			
C. Use mathematical models to represent and understand quantitative relationships.	C	√	√	√	√	√
D. Analyze changes in various contexts.	C	√	√		√	√
3. GEOMETRY						
A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematics arguments about geometric relationships.	C*			√	√	
B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	C*	√		√		
C. Apply transformations and use symmetry to analyze mathematical situations.	C			√		
D. Use visualization, spatial reasoning, and geometric modeling to solve problems.	C			√		
4. MEASUREMENT						
A. Understand measurable attributes of objects and the units, systems, and processes of measurement.	C*				√	
B. Apply appropriate techniques, tools, and formulas to determine measurements.	C				√	

ATTACHMENT 1

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

DRAFT
College Board Standards for College Success™
Correlation to New Mexico State Standards

NM State Standards		College Board Standards for College Success in Mathematics and Statistics				
		Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
Grade 6						
5. DATA ANALYSIS AND PROBABILITY						
A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	C					√
B. Select and use appropriate statistical methods to analyze data.	C					√
C. Develop and evaluate inferences and predictions that are based on data.	C					√
D. Understand and apply basic concepts of probability.	C					√
Grade 7						
1. NUMBER AND OPERATIONS						
A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	C	√	√			
B. Understand the meaning of operations and how they relate to one another.	C	√				
C. Compute fluently and make reasonable estimates.	C	√				√
2. ALGEBRA						
A. Understand patterns, relations, and functions.	C	√	√	√	√	√
B. Represent and analyze mathematical situations and structures using algebraic symbols.	C		√		√	√
C. Use mathematical models to represent and understand quantitative relationships.	C			√	√	√
D. Analyze changes in various contexts.	C	√	√			
3. GEOMETRY						
A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematics arguments about geometric relationships.	C	√		√	√	
B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	C			√		
C. Apply transformations and use symmetry to analyze mathematical situations.	C				√	
D. Use visualization, spatial reasoning, and geometric modeling to solve problems.	C			√	√	

DRAFT
College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

NM State Standards		College Board Standards for College Success in Mathematics and Statistics				
		Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
Grade 7						
4. MEASUREMENT						
A. Understand measurable attributes of objects and the units, systems, and processes of measurement.	C				√	
B. Apply appropriate techniques, tools, and formulas to determine measurements.	C		√	√	√	
5. DATA ANALYSIS AND PROBABILITY						
A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	C*					√
B. Select and use appropriate statistical methods to analyze data.	C					√
C. Develop and evaluate inferences and predictions that are based on data.	C					√
D. Understand and apply basic concepts of probability.	C					√
Grade 8						
1. NUMBER AND OPERATIONS						
A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	C	√			√	
B. Understand the meaning of operations and how they relate to one another.	C*	√	√			
C. Compute fluently and make reasonable estimates.	C	√	√		√	
2. ALGEBRA						
A. Understand patterns, relations, and functions.	C		√			
B. Represent and analyze mathematical situations and structures using algebraic symbols.	C*	√	√			
C. Use mathematical models to represent and understand quantitative relationships.	C		√			
D. Analyze changes in various contexts.	C	√	√	√	√	√
3. GEOMETRY						
A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematics arguments about geometric relationships.	C			√		
B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	C			√	√	

DRAFT
College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

NM State Standards		College Board Standards for College Success in Mathematics and Statistics				
		Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
Grade 8						
3. GEOMETRY						
C. Apply transformations and use symmetry to analyze mathematical situations.	C			√		
D. Use visualization, spatial reasoning, and geometric modeling to solve problems.	C			√	√	
4. MEASUREMENT						
A. Understand measurable attributes of objects and the units, systems, and processes of measurement.	C				√	
B. Apply appropriate techniques, tools, and formulas to determine measurements.	C	√			√	
5. DATA ANALYSIS AND PROBABILITY						
A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	C	√		√		√
B. Select and use appropriate statistical methods to analyze data.	C			√		√
C. Develop and evaluate inferences and predictions that are based on data.	C					√
D. Understand and apply basic concepts of probability.	C*					√
Grades 9-12						
1. NUMBER AND OPERATIONS	NC					
2. ALGEBRA, FUNCTIONS, AND GRAPHS						
A. Represent and analyze mathematical situations and structures using algebraic symbols.	C*	√	√	√		
B. Understand patterns, relations, functions, and graphs.	C	√	√			
C. Use mathematical models to represent and understand quantitative relationships.	C	√	√		√	
D. Analyze changes in various contexts.	C*		√	√	√	√

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College Board Standards for College Success™
Correlation to New Mexico State Standards

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

NM State Standards **Grades 9-12**		College Board Standards for College Success in Mathematics and Statistics				
		Number and Operations	Algebra	Geometry	Measurement	Data Analysis and Probability
3. GEOMETRY AND TRIGOMETRY						
A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.	C*	√		√	√	
B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	C			√		
C. Apply transformations and use symmetry to analyze mathematical situations.	C			√		
D. Use visualization, spatial reasoning, and geometric modeling to solve problems.	C		√	√	√	
4. MEASUREMENT	NC					
5. DATA ANALYSIS AND PROBABILITY						
A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	C					√
B. Select and use appropriate statistical methods to analyze data.	C*					√
C. Develop and evaluate inferences and predictions that are based on data.	C					√
D. Understand and apply basic concepts of probability.	C*					√

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

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College Board Standards for College Success™
Correlation to New Mexico State Standards
ENGLISH LANGUAGE ARTS

NM State Standards **Grade 6**		College Board Standards for College Success							
		Reading				Writing			
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	Engage Ideas and Audiences Through Texts	Evaluate and Revise Texts	Present Technically Sound Texts	Research
READING AND LISTENING									
A. Listen to, read, react to, and interpret information.	C*	√				√	√		
B. Gather and use information for research and other purposes.	C*	√		√	√				√
C. Apply critical thinking skills to analyze information.	C*				√	√		√	√
D. Demonstrate competence in the skills and strategies of the reading process.	C*	√		√	√	√	√	√	√
WRITING AND SPEAKING									
A. Use speaking as an interpersonal communication tool.	NC								
B. Apply grammatical and language conventions to communicate.	C*					√		√	√
C. Demonstrate competence in the skills and strategies of the writing process	C*					√	√		√
LITERATURE AND MEDIA									
A. Use language, literature, and media to understand various social and cultural perspectives.	C*	√		√					
B. Identify ideas and make connections among literary works.	C*			√					

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

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College Board Standards for College Success™
Correlation to New Mexico State Standards

NM State Standards **Grade 7**		College Board Standards for College Success							
		Reading				Writing			
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	Engage Ideas and Audiences Through Texts	Evaluate and Revise Texts	Present Technically Sound Texts	Research
READING AND LISTENING									
A. Listen to, read, react to, and interpret information.	C	√		√	√	√			
B. Gather and use information for research and other purposes.	C*	√				√			√
C. Apply critical thinking skills to analyze information.	C			√		√			√
D. Demonstrate competence in the skills and strategies of the reading process.	C	√	√	√	√				
WRITING AND SPEAKING									
A. Use speaking as an interpersonal communication tool.	C*	√				√	√		
B. Apply grammatical and language conventions to communicate.	C*			√		√	√	√	
C. Demonstrate competence in the skills and strategies of the writing process	C	√		√		√			√
LITERATURE AND MEDIA									
A. Use language, literature, and media to understand various social and cultural perspectives.	C	√		√					
B. Identify ideas and make connections among literary works.	C*			√					

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

DRAFT
College Board Standards for College Success™
Correlation to New Mexico State Standards

NM State Standards **Grade 8**		College Board Standards for College Success							
		Reading				Writing			
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	Engage Ideas and Audiences Through Texts	Evaluate and Revise Texts	Present Technically Sound Texts	Research
READING AND LISTENING									
A. Listen to, read, react to, and interpret information.	C*	√		√	√	√	√		
B. Gather and use information for research and other purposes.	C			√		√			√
C. Apply critical thinking skills to analyze information.	C*	√		√		√		√	√
D. Demonstrate competence in the skills and strategies of the reading process.	C	√	√	√	√				
WRITING AND SPEAKING									
A. Use speaking as an interpersonal communication tool.	C		√	√		√			√
B. Apply grammatical and language conventions to communicate.	C*					√	√	√	
C. Demonstrate competence in the skills and strategies of the writing process	C*					√			√
LITERATURE AND MEDIA									
A. Use language, literature, and media to understand various social and cultural perspectives.	C	√		√					
B. Identify ideas and make connections among literary works.	C			√					

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

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College Board Standards for College Success™
Correlation to New Mexico State Standards

NM State Standards **Grade 9**		College Board Standards for College Success							
		Reading				Writing			
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	Engage Ideas and Audiences Through Texts	Evaluate and Revise Texts	Present Technically Sound Texts	Research
READING AND LISTENING									
A. Listen to, read, react to, and analyze information.	C*					√			√
B. Synthesize and evaluate information to solve problems across the curriculum.	C*								√
C. Demonstrate critical thinking skills to evaluate information and solve problems.	C	√	√	√			√		√
D. Apply knowledge of reading process to evaluate print, non-print, and technology-based information.	C*			√	√				√
WRITING AND SPEAKING									
A. Communicate information in a coherent and persuasive manner using verbal and non-verbal language.	C*					√			
B. Apply grammatical and language conventions to communicate.	C						√	√	
C. Demonstrate competence in the skills and strategies of the writing process to inform and persuade.	C	√		√		√	√	√	
LITERATURE AND MEDIA									
A. Use language, literature, and media to understand the role of the individual as a member of many cultures.	C*	√				√			
B. Understand literary elements, concepts, and genres.	C*			√	√				

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

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College Board Standards for College Success™
Correlation to New Mexico State Standards

NM State Standards **Grade 10**		College Board Standards for College Success							
		Reading				Writing			
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	Engage Ideas and Audiences Through Texts	Evaluate and Revise Texts	Present Technically Sound Texts	Research
READING AND LISTENING									
A. Listen to, read, react to, and analyze information.	C*					√	√		√
B. Synthesize and evaluate information to solve problems across the curriculum.	C								√
C. Demonstrate critical thinking skills to evaluate information and solve problems.	C*	√		√	√				√
D. Apply knowledge of reading process to evaluate print, non-print, and technology-based information.	C*	√	√	√	√				√
WRITING AND SPEAKING									
A. Communicate information in a coherent and persuasive manner using verbal and non-verbal language.	C*					√			√
B. Apply grammatical and language conventions to communicate.	C							√	√
C. Demonstrate competence in the skills and strategies of the writing process to inform and persuade.	C*					√		√	√
LITERATURE AND MEDIA									
A. Use language, literature, and media to understand the role of the individual as a member of many cultures.	C*	√	√						
B. Understand literary elements, concepts, and genres.	C*	√	√	√	√				

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

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College Board Standards for College Success™
Correlation to New Mexico State Standards

NM State Standards **Grade 11**		College Board Standards for College Success							
		Reading				Writing			
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	Engage Ideas and Audiences Through Texts	Evaluate and Revise Texts	Present Technically Sound Texts	Research
READING AND LISTENING									
A. Listen to, read, react to, and analyze information.	C*	√		√		√			√
B. Synthesize and evaluate information to solve problems across the curriculum.	C*								√
C. Demonstrate critical thinking skills to evaluate information and solve problems.	C*	√		√	√	√			√
D. Apply knowledge of reading process to evaluate print, non-print, and technology-based information.	C*	√		√	√	√		√	√
WRITING AND SPEAKING									
A. Communicate information in a coherent and persuasive manner using verbal and non-verbal language.	C*						√		√
B. Apply grammatical and language conventions to communicate.	C						√	√	√
C. Demonstrate competence in the skills and strategies of the writing process to inform and persuade.	C*					√	√		√
LITERATURE AND MEDIA									
A. Use language, literature, and media to understand the role of the individual as a member of many cultures.	C	√		√	√				
B. Understand literary elements, concepts, and genres.	C*		√		√				

C	Covered
NC	Not Covered
C*	Most Proficiencies Covered
P	Prerequisite

DRAFT
College Board Standards for College Success™
Correlation to New Mexico State Standards

NM State Standards **Grade 12**		College Board Standards for College Success							
		Reading				Writing			
		Respond to Texts and Put Texts in Context	Interpret and Analyze the Communications Context	Interpret and Analyze Text Elements and Structures	Reflect On and Direct Processes for Constructing Meaning from Texts	Engage Ideas and Audiences Through Texts	Evaluate and Revise Texts	Present Technically Sound Texts	Research
READING AND LISTENING									
A. Listen to, read, react to, and analyze information.	C	√		√		√	√		
B. Synthesize and evaluate information to solve problems across the curriculum.	C								√
C. Demonstrate critical thinking skills to evaluate information and solve problems.	C	√	√			√			√
D. Apply knowledge of reading process to evaluate print, non-print, and technology-based information.	C*	√		√					√
WRITING AND SPEAKING									
A. Communicate information in a coherent and persuasive manner using verbal and non-verbal language.	C*					√			√
B. Apply grammatical and language conventions to communicate.	C					√			√
C. Demonstrate competence in the skills and strategies of the writing process to inform and persuade.	C*					√	√		
LITERATURE AND MEDIA									
A. Use language, literature, and media to understand the role of the individual as a member of many cultures.	C	√							
B. Understand literary elements, concepts, and genres.	C*				√				

MATH COMPETENCIES ON EXIT FROM HIGH SCHOOL

PROPOSED BY NEW MEXICO COMMUNITY COLLEGE AND UNIVERSITY FACULTY

NOVEMBER 2005

I. Computation

A. Successful students know basic mathematical operation. They

A.1. apply arithmetic operations with decimals, fraction and integers (e.g., add and subtract by finding a common denominator, multiply and divide, reduce and perform long division without a calculator);
A.2. use exponents and scientific notation;
A.3. use radicals correctly;
A.4. understand relative magnitude;
A.5. calculate using absolute value;
A.6. use the correct order of arithmetic operation, particularly demonstrating facility with the Distributive Law and use calculators and computer spreadsheets; and,
A.7. know terminology for integers, rational numbers, irrational numbers and complex numbers.

B. Successful students know and demonstrate fluency with mathematical notation and computation and symbolic manipulations. They

B.1. correctly perform addition, subtraction, multiplication and division that include variables;
B.2. perform appropriate basic operations on sets (e.g., union, intersection, elements of, subsets and complement);
B.3. use alternative symbolic expressions, particularly alternative to *x* (e.g., letters of the Greek alphabet that do not already have specific scientific or mathematical meanings); and,
B.4. understand the uses of mathematical symbols as well as the limitations on their appropriate uses (e.g., equal signs, parentheses, superscripts and subscripts).

II. Algebra (Intro and Intermediate I & II)

A. Successful students know and apply basic algebraic concepts. They

A.1. use the appropriate properties to manipulate polynomials;
A.2. factor polynomials (e.g., difference of squares, perfect square trinomials, difference of two cubes and trinomials such as $6x^2 + 7x - 3$);
A.3. simplify and perform basic operations on rational expressions, including finding common denominators (e.g., add, subtract, multiply and divide);
A.4. understand rational exponents, roots and their properties;
A.5. know basic theorems of exponents and roots;
A.6. divide low degree polynomials (e.g., long division); and,
A.7. know how to compose and decompose functions and how to find inverses of basic functions.

B. Successful students use various appropriate techniques to solve basic equations and inequalities. They

B.1. solve linear equations and inequalities both algebraically and graphically;
B.2. solve systems of linear equations and inequalities using algebraic and graphical methods (e.g., substitution, elimination, addition and graphing); and,
B.3. solve quadratic equations using various appropriate methods while recognizing real solutions. This includes:
B.4a. factoring;
B.4b. completing the square;
B.4c. the quadratic formula; and,
B.4d. graphical methods.

C. Successful students distinguish between and among expressions, formulas, equations and functions. They

C.1. know when it is possible or not possible to simplify, solve, substitute or evaluate;
C.2. understand that the concept of a function has a specific definition beyond being a type of algebraic expression;
C.3. represent functions, patterns and relationships in different ways (e.g., statements, formulas and graphs); and,
C.4. understand the language and notation functions (e.g., domain and range).

D. Successful students understand the relationship between equations and graphs. They

D.1. understand basic forms of the equation of a straight line and how to graph the line without the aid of a calculator; and,
D.2. understand the basic shape of a quadratic function and the relationships between the roots of the quadratic and x-intercepts of the graph of the function.

E. Successful students understand algebra well enough to apply it procedurally and conceptually to a range of common problems. They

E.1. recognize which type of expression best fits the context of a basic application (e.g., linear equation to solve distance/time problems' quadratic equation to explain the motion of a falling object).

III. Geometry

A. Successful students understand and use both basic plane and solid geometry. They

A.1. know properties of similarity, congruence and parallel lines cut by a transversal;
A.2. know how to figure area and perimeter of basic figures;
A.3. understand the ideas behind simple geometric proofs and are able to develop and write simple geometric proofs;
A.4. solve problems involving proofs through the use of geometric constructions;
A.5. use similar triangles to find unknown angle measurements and lengths of sides;
A.6. visualize solids and surfaces in three-dimensional space (e.g., recognize the shape of a box based on a two-dimensional representation of its surfaces; and recognize the shape of a cone based on a two-dimensional representation of its surface);
A.7. know basic formulas for volume and surface area for three-dimensional objects; and,
A.8. know basic terminology of logic including conditional, inverse, converse, contrapositive, and if and only if.

B. Successful students know analytic (i.e. coordinate) geometry. They

B.1. know geometric properties of lines (e.g., slope and midpoint of a line segment);
B.2. know the formula for the distance between two points;
B.3. solve mathematical and real-world problems (e.g., ladders, shadows and poles) that involve the properties of special right triangles with the Pythagorean Theorem and its converse; and,
B.4. recognize geometric translations and transformations algebraically.

C. Successful students understand basic relationships between geometry and algebra. They

C.1. know that geometric objects and figures can also be described algebraically (e.g., ax + by = c is the standard from of a line).

IV. Mathematical Reasoning

A. Successful students know important definitions, why definitions are necessary and are able to use mathematical reasoning to solve problems. They

- A.1. use inductive reasoning in basic arguments;
- A.2. use deductive reasoning in basic arguments;
- A.3. use multiple representations (e.g., analytic, numerical and geometric) to solve problems;
- A.4. learn to solve multi-step problems;
- A.5. use a variety of strategies to revise solution processes;
- A.6. understand the uses of both proof and counterexample in problem solutions and are able to conduct simple proofs; and,
- A.7. are familiar with the process of abstracting mathematical model from applications and are able to interpret solutions in the context of these source problems.

B. Successful students are able to work with mathematical notation to solve problems and to communicate solutions. They

- B.1. translate simple statements into equations (e.g., "Bill is twice as old as John" is expressed by the equation b = 2j); and,
- B.2. understand the role of written symbols in representing mathematical ideas and the precise use of special symbols of mathematics.

C. Successful students know a select list of mathematical facts and know how to build upon those facts (e.g., Pythagorean Theorem; formulas for perimeter, area, volume; and quadratic formula).

D. Successful students know how to estimate. They

- D.1. recognize the relationship between decimal approximations and fractions;
- D.2. know when to use an estimation or approximation in place of an exact answer;
- D.3. recognize the accuracy of an estimation; and,
- D.4. know how to make and use estimations in all applications.

E. Successful students understand the appropriate use as well as the limitation of calculators. They

- E.1. recognize when the results produced are unreasonable or represent misinformation;
- E.2. use calculators for systematic trial-and-error problem solving; and,
- E.3. plot useful graphs.

F. Successful students are able to generalize and to go from specific to abstract and back again. They

F.1. determine the mathematical concept from the context of an external problem, solve the problem and interpret the mathematical solution in the context of the problem; and,
F.2. know how to use specific instances of general facts, as well as how to look for general results that extend particular results.

G. Successful students demonstrate active participation in the process of learning mathematics. They

G.1. are willing to experiment with problems that have multiple solution methods;
G.2. demonstrate an understanding of the mathematical ideas behind the steps of a solution, as well as the solution;
G.3. show an understanding of how to modify patterns to obtain different results;
G.4. show an understanding of how to modify solution strategies to obtain different results; and,
G.5. recognize when a proposed solution does not work, analyze why and use the analysis to seek a valid solution.

ENGLISH COMPETENCIES ON EXIT FROM HIGH SCHOOL

PROPOSED BY NEW MEXICO COMMUNITY COLLEGE AND UNIVERSITY FACULTY

NOVEMBER 2005

I. Reading & Comprehension

A. Successful students use reading skills and strategies to understand informational texts. They

- A.1. understand instructions, functional texts, historical documents, government publications, newspapers and textbooks, and interpret visual images;
- A.2. use monitoring and self-correction, as well as reading aloud, as means to ensure comprehension;
- A.3. understand vocabulary and content, including subject-area terminology, connotative and denotative meanings, and idiomatic meanings;
- A.4. exercise a variety of strategies to understand the origins and meanings of new words, including recognition of cognates and contextual clues; and,
- A.5. identify and interpret the content and primary elements of the types of charts, graphs and visual media that occur most commonly in texts.

B. Successful students engage in an analytic process to enhance reading comprehension and create personal meaning when reading text. They

- B.1. are able to annotate, summarize, formulate a personal response, critique, synthesize, evaluate and question, and agree or disagree;
- B.2. make supported inferences and draw conclusions based on textual features, seeking such evidence in text, format, language use, expository structures and arguments used;
- B.3. use reading skills and strategies to understand a variety of types of literature;
- B.4. understand plot and character development in literature, including character motive, causes for actions and the credibility of events;
- B.5. identify basic beliefs, perspectives and philosophical assumptions underlying an author's work...this includes identifying points of view, attitudes and the values conveyed by specific use of language;
- B.6. exercise a variety of strategies to understand the origins and meanings of new words, including analysis of word roots and the determination of word derivations; and,
- B.7. recognize and comprehend narrative terminology and techniques.

C. Successful students are able to understand the defining characteristics of texts and to recognize a variety of literary forms (genres). They

C.1. comprehend the salient characteristics of major types and genres of texts;
C.2. understand the formal constraints within different texts and genres and can distinguish between, for example, a Shakespearean sonnet and a poem written in free verse;
C.3. are able to discuss with understanding the effects of an author's style and use of literary devices to influence the reader and evoke emotions;
C.4. demonstrate familiarity with the concept that historical, social (such as gender and ethnicity), cultural and economic contexts influence form, style and point of view; and that social influences affect an author's descriptions of character, plot and setting; and,
C.5. are able to discuss with understanding the relationships between literature and politics, including the political assumptions underlying an author's work and the impact of literature on political movements and events.

D. Successful students are familiar with a range of world literature. They

D.1. demonstrate familiarity with major literary works and periods of English and American literature and their characteristic forms, subjects and authors; and,
D.2. demonstrate familiarity with authors from literary traditions beyond the English-speaking world.

II. Writing

A. Successful students apply basic grammar conventions within the context of their own writing. They

A.1. identify and use correctly and consistently parts of speech, including nouns, pronouns, verbs, adverbs, conjunction, prepositions, adjectives and interjections;
A.2. use subject-verb agreement and verb tense consistently and correctly;
A.3. demonstrate consistent, correct and appropriate pronoun agreement and the use of different types of clauses and phrases, including adverb clauses, adjective clauses and adverb phrases; and,
A.4. consistently avoid run-on sentences and sentence fragments.

B. Successful students know conventions of punctuation and capitalization. They

B.1. use commas, ellipses, colons, hyphens, semi-colons, apostrophes and quotation marks correctly; and,

B.2. capitalize sentences and proper nouns correctly.

C. Successful students know conventions of spelling. They

C.1. use a dictionary and other resources to spell new, unfamiliar or difficult words;
C.2. differentiate between commonly confused words, such as "affect" and "effect"; and,
C.3. know how to use the spell-checker and grammar check function in word processing software while understanding the limitations of relying upon these tools.

D. Successful students use appropriate strategies to write clearly and coherently. They

D.1. Pre-writing Elements:

D.1.1. know and use several pre-writing strategies, such as creating outlines;
D.1.2. know the difference between a topic and a thesis;
D.1.3. distinguish between formal and informal styles, for example, between academic essays and personal memos;
D.1.4. use a variety of strategies to adapt writing for different audiences and purposes, such as including appropriate content and using appropriate language, style tone and structure; and,
D.1.5. understand rhetorical conventions of audience, purpose and occasion.

D.2. Composing Elements:

D.2.1. construct coherent paragraphs and arrange paragraphs in logical order;
D.2.2. use a variety of sentence structures appropriately;
D.2.3. present ideas to achieve overall coherence;
D.2.4. use words correctly, use words that mean what the writer intends to say, and use a varied vocabulary;
D.2.5. demonstrate development of a controlled yet unique style and voice in writing where appropriate;
D.2.6. articulate a position through a thesis statement and advance it using evidence, examples and counterarguments that are relevant to the audience or issue at hand;
.D.2.7. use a variety of methods to develop arguments, including compare-contrast reasoning, logical arguments (inductive-deductive), and alternation between general and specific (e.g., connections between public knowledge and personal observation and experience);

D.2.8. use appropriate strategies to write expository essays that employ supporting evidence;
D.2.9. use appropriate strategies and formats to write personal and business correspondence, including appropriate organizational patterns, formal language and tone; and,
D.2.10. utilize word processing to aid in the composing process.

D.3. Revision and Editing Elements:

D.3.1. employ basic editing skills proficiently to identify obvious mechanical errors, clarify and improve the structure of the piece and sharpen language and meaning;
D.3.2. review ideas and structure in substantive ways to improve depth of information and logic of organization;
D.3.3. reassess appropriateness of writing in light of genre, purpose and audience;
D.3.4. use feedback from others to revise written work;
D.3.5. use rhetorical devices and develop an accurate and expressive style of communication; and,
D.3.6. use a style manual, such as the Modern Language Association (MLA), to apply writing conventions and to create documentation formats in a manner consistent with the manual.

E. Successful students use writing not only as a product for an audience but also as a process for learning. They

E.1. use writing as a means of externalizing thought processes to help organize ideas across content areas with the understanding that writing assists thinking and enhances learning; and,
E.2. know a variety of means for externalizing thought processes, for example note-taking, learning logs, reflective pieces, etc.

III. Research Skills

A. Successful student understand and use research methodologies. They

A.1. formulate research questions, refine topics, develop a plan for research and organize what is known about the topic;
A.2. use research to support and develop their own opinions, as opposed to simply restating existing information or opinions;
A.3. identify claims in their writing that require outside support or verification; and,
A.4. identify through research the major concerns and debates in a given community or field of inquiry and address these in their writing.

B. Successful students know how to find a variety of sources and use them properly. They

B.1. collect information to develop a topic and support a thesis;
B.2. understand the difference between primary and secondary sources;
B.3. understand how to evaluate sources of information to ascertain credibility, origin, potential bias, and overall quality;
B.4. seek a variety of print and electronic primary and secondary sources;
B.5. understand the concept of plagiarism and how (or why) to avoid it and understand rules for paraphrasing, summarizing and quoting from sources;
B.6. appropriately include information from sources, explain technical terms and notations and logically introduce and incorporate quotations; and,
B.7. use information from primary and secondary sources and incorporate charts, graphs, tables and illustrations where appropriate.

IV. Critical Thinking Skills

A. Successful students demonstrate the ability to analyze. They

A.1. are able to discuss with understanding how personal experiences and values affect reading comprehension and interpretation;
A.2. demonstrate an ability to make connections between the component parts of a text and the larger theoretical structure;
A.3. anticipate and address readers' biases and expectations; and,
A.4. write to persuade the reader by anticipating and addressing counterarguments.

B. Successful students demonstrate the ability to think independently. They

B.1. are comfortable formulating and expressing their own ideas;
B.2. support their arguments with logic and evidence relevant to their audience;
B.3. understand fully the scope of their arguments and the claims underlying them; and,
B.4. reflect on and assess the strengths and weaknesses of their ideas and the expression of those ideas.

Note: While not addressed in this set of competencies, English faculty support the early development of listening and speaking skills.

State Alignment Systems
Exams used for high school achievement and college placement

State	Name of Exam & Administration	Use in HS				Use in Postsecondary		Since date/statute	Notes Source
		AYP	State Rating	Graduation Req.	Advsmt.	Admission	Placement		
CA	California augments 3 of its 11th grade standards-based tests with 15 items each, provided by Cal State University System, so students know before 12th grade if they need remediation in language arts or math. The results are used only for advisement.								
	Early Assessment Program (EAP) of California Standards Test (CST) in grade 11 -- English-language arts -- Algebra II and -- Summative HS Math	No.	N.A.	No. CA uses Cal HS Exit Exam (CAHSEE) in English language arts (reading, writing) and math for state exit exam. First attempt in spring grade 10 with five add'l opportunities to pass each section.	Yes. Student, school and district receive reports before the end of the calendar year	No.	Yes, advisory for community college placement	2003 Joint initiative of California State University (CSU), the California Department of Education (CDE) and the Cal. State Board of Education (SBE) SB 1653 Early Assessment Program currently before CA senate for CC advisement	http://www.cde.ca.gov/ci/gs/ps/eapindex.asp Program has three components: 1) exams in 11th grade, 2) 12th grade college preparation, and 3) teacher P.D. Lupita Cortez Alcala 916-319-0558 lalcala@cde.ca.gov
CO	Colorado requires every student to take the ACT in April of 11th grade. The results are included on students' transcripts and may be used for college admission and placement.								
	Colorado ACT Required for all grade 11 students. Administered late April; make-up in late May; results July; released Aug.	No. CO uses Col Stu Assmt Prog in grades 3-10	Yes. (CSAR) Colo. School Acct. Rating	No. Must include on student transcript	Locally determined	IHEs accept CO-ACT score as an "official" ACT score.		2001 C.S. 22-7-409.(1.5)	Russ Masco (Consolidated Fed'l Programs) 303-866-6306. Diane Lefley (Supervisor of Measurement) 303-866-6997 (study in 05 shows .75-.8 correlation with 10th gr CSAP) (Will present trend data at CCSSO conf June 25-28) Gully. Stanford@cic.state.co.us

State Alignment Systems
Exams used for high school achievement and college placement

State	Name of Exam & administration	Use in HS				Use in Postsecondary		Since date/statute	Notes Source
		AYP	State Rating	Grad. Req.	Advsmt.	Admission	Placement		
IL	Illinois requires all students to take the ACT, 2 WorkKeys components and a state science assessment in 11th grade as part of its state assessment and accountability system. The results are used in determining proficiency for computing AYP and are included on students' transcripts; results may be used for college admissions and placement.								
	Prairie State Achievement Exam (PSAE). Includes ACT, a state-developed science assmt & 2 WorkKeys (reading for info & applied math). Student must have 2 chances in grade 11 to take exam.	Yes.	N.A.	Must take the exam. Goes on perm transcript. No score set for grad but a cut score is used for Prairie State Achievem't Award.		ACT part can be used for admission		2004. (ILCS 5/2-3.64)	Becky McCabe, Student Assessment Division Administrator 217-782-4823 (left msg) Kathy Johnson Regional Prog. Dir. U of Ill 847-446-1275 johnson2@uillinois.edu left msg./e-mail
KY	Kentucky is in the process of establishing a phase-in schedule for 3 required ACT assessments in grades 8, 10 and 11, to be provided at state expense. Results will be used for student advisement in high school and for state school rating system but not yet for AYP. ACT is used for college admission and placement.								
	Phasing in the Kentucky Work & College Readiness Exam: EXPLORE-Gr 8 (06-07) PLAN-Gr 10 fall (06-07) ACT-Gr 11 spr (07) Individual learning plan in Grade 11. Work-Keys - students in grades 10, 11, 12 may take at state expense, no later than 07-08.	No. KY uses CATS in math, read'g only (this may chnge)	Yes, among other pieces (see file)	No.	Yes. Refer to AP or provide inter-vention, as indicated Teacher PD will be provided as per ACT policy.	ACT, yes	Yes, mandatory Placement req in KY for all higher ed. (CC may choose to use Compass or other for placement)	SB 130 (2006) amending KRS 158.6453 Leg. passed spring 2006 requiring all students in 11th grade take the ACT, effective spring 2007	Legislation passed Jan 06. Board will determine in Aug. 06 how to implement. Phase- in schedule is not finalized. Need to resolve concern re: modified assessments/ accoms for students w/ disabilities Note: 06 stat also requires standardized end-of-course tests in Algebra I, Algebra II & Geometry by 08-09. Kathy Moore in the office of Roger Ervin 502-564-9853 Re: IHE info contact Com'n on PSE, 502-573-1555. Charles McGrew 502-573-1555

State Alignment Systems
Exams used for high school achievement and college placement

State	Name of Exam & Administration	Use in HS				Use in Postsecondary		Since date/statute	Notes Source
		AYP	State Rating	Grad. Req.	Advsmt.	Admission	Placement		
LA	Louisiana underwrites cost of any student who voluntarily elects to take EXPLORE, grades 8 & 9, and PLAN, grade 10. Results are used for student advisement in middle and high school. ACT (at student expense) is used for college admission and placement.								
	EPAS: ACT Inc. Educational Planning and Assessment System EXPLORE & PLAN **students participate voluntarily** Districts sign MOU w/ State Bd of Regents to offer EXPLORE grade 8/9 and/or PLAN grade 10. All districts in state participate.	No. Use LA Educ Assmt Prog 21 & Grad Exit Exam (GEE) 21 (State has correl tables.)	N.A.	No. GEE 21 Math & Eng in Gr 10 GEE 21 Science & Soc Stud in Gr 11 To grad, must pass Math, Eng & either Sci or SoSt	Yes. Regents pay for staff training provided by ACT.	A student cannot be admitted if needs more than one remedial course Cite: website		2001 Based on Louisiana Regents Master Plan for Public Postsecondary Education.	LA Regents website. Heather Devall, EPAS Program Mgr. 225-342-4253 Higher Ed Regents pay full cost of EXPLORE & PLAN Note: state claims approx. 85% – 90% of HS students take and pay for the ACT in grade 11. LA has aligned ACT college readiness standards with state required comprehensive curriculum.
ME	Maine requires all 11th grade students to take the SAT and expects to use results for AYP purposes. State will work with vendors to develop items or test components (i.e., science) to address areas not covered by the SAT.								
	SAT in critical reading, writing and mathematics 11th grade April 1 administration Will require PSAT (for grade 10) in 2007.	Yes, pend'g appr. USDoE		No. HS grad reqs established by locally determined assessment of state stds. Revisied rules for HS grad will prob req SAT as an element, not determinatv.	School and student receive SAT reports usable for advisem't purposes.	Pursuant to IHE policy.	Pursuant to IHE policy.	2006. Maine Statute Title 20-A, Chapter 222, §6202 charges Commissioner of Education to establish a statewide assessment program.	Valerie Seabert 207-624-6834 State pays $40 per student cost and provides free bus transport and food for Saturday test date. At state expense, high schools provide College Board online test preparation course for all students 9-12 year round.

State Alignment Systems
Exams used for high school achievement and college placement

State	Name of Exam & administration	Use in HS				Use in Postsecondary		Since date/statute	Notes Source
		AYP	State Rating	Grad. Req.	Advsmt.	Admission	Placement		
MI	Michigan will require all 11th grade students to take the ACT and WorkKeys beginning in spring 2007, and will use ACT results for AYP purposes.								
	MICH Merit Exam will be both ACT and Work-keys over 2-day period in spring of 11th grade ACT measures English language arts, math, reading, social Studies, science. Workkeys assessmt of English lang. arts, math, science, & soc. studies	Yes, Pend'g Appr. USDOE	Report Card incls school accred which req 95% partic in exams.	Not by state law, but a district may make it a graduation requirement.		Yes.	Depends on institutional policy.	Begins 2007 for the class of 2008, pending approval by USDoE for NCLB purposes. Mich Public Acts 592-596 of 2004. Signed by Gov. in Jan. 2005.	State will pay for the 2-day test and for one re-take Jan Ellis 517-241-4395
TX	The Texas Higher Education Coordinating Board has determined college readiness cut scores for several instruments, including the reading, writing and math components of the mandatory 11th grade state TAKS test. The college readiness cut score is different from the score required for high school graduation. (Cut scores have also been identified for the ACT, COMPASS, ACCUPLACER and the Texas Higher Education Assessment.)								
	A college-readiness cut score for TAKS (Texas Assessment of Knowledge & Skills) mandatory 11th grade test correlates with college placement test scores (incl. ACT and SAT) to serve as predictor of college success. Applies to TAKS Exit Level (11) Mathematics, English and Writing. Admin. 11th grade spring semester.	Yes.		Yes, a portion of the same test that is used for HS grad. Lower "cut" score for HS grad. (Note: state cut score for HS grads is increasing over 3 years from 04 to 07)	Study relates scale score on college readiness test to predict'd ACT & SAT-1 scores.	No.	If student achieves cut score on the Higher Ed Readiness Component set by the Texas Higher Ed Coordinating Bd (THECB), is exempt from taking TX Success Init (TSI) assessment required in stat. for state IHEs (§51.306).	Spring 2004 Texas Ed. Code 39.023 (c) and 51.3062 requires college readiness component as part of the state std based assessment (TAKS) (1987 law mandating college readiness test (TASP), Sec 51.306 Texas Ed Code).	Victoria Young, Dir. of Reading, Writing & Social Studies, TEA. 512-463-9536 (did not speak to her) Technical Digest 03-04, Chapter 8. (See TEA website)